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# MULTIMEDIA UNIVERSITY

## FINAL EXAMINATION

TRIMESTER 2, 2016/2017

### MAX1033 – 3D RENDERING FOR ANIMATION

(All sections / Groups)

25 FEBRUARY 2017  
2.30 p.m. - 4.30 p.m.  
( 2 Hours )

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#### INSTRUCTIONS TO STUDENTS

1. This Question paper consists of 3 pages with 5 questions only.
2. Answer **FOUR** out of FIVE questions. All questions carry equal marks and the distribution of the marks for each question is given.
3. Please write all your answers in the Answer Booklet provided.

**QUESTION 1**

Otto is tasked to light the interior of a kitchen. After collecting a multitude of photographs for references, Otto must observe a number of lighting and shadow characteristics to replicate in his 3D light setup. **LIST** and **EXPLAIN** the **THREE (3)** lighting characteristics and **TWO (2)** shadow characteristics that must be observed by Otto. (10 marks)

**QUESTION 2**

- i) The following are descriptions of various light types that are available in Autodesk Maya. Identify the light types based on the given characteristics.

Light 1 - Shines a beam of light within a narrow range defined by a cone. (1 mark)

Light 2 - Shines evenly in all directions from a single point in space (1 mark)

Light 3 - Two-dimensional rectangular light source. Intensity of light can be controlled by the size the rectangle. (1 mark)

Light 4 - Illuminates evenly in one direction. (1 mark)

Light 5 - Generally used to simulate indirect light (1 mark)

Light 6 - Illuminates within the confines of a particular shape. Typically visually represents the extent of the light (1 mark)

- ii) Image 1 shows a render of shadow. Identify the type of a shadow that is being shown. (1 mark)

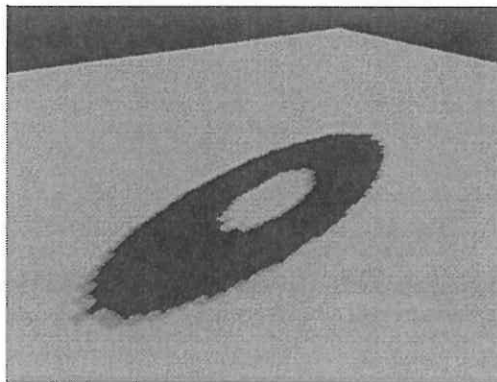


Image 1

- iii) When creating a light in Autodesk Maya, the attribute Decay Rate is available to be manipulated by the user. **EXPLAIN** the Decay Rate attribute. (3 marks)

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**QUESTION 3**

Jonny has been asked to texture a well-used motorcycle in a steampunk style.

- i) What is texturing? (1 mark)
- ii) Explain the **THREE (3)** uses of textures? ( 3 marks)
- iii) After completing his work, Jonny received feedback from his supervisor that his motorcycle did not achieve the photorealism required as it looked too 'new'.  
Explain the TWO (2) principles of photoreal 3D that Jonny needs to understand in order to make his motorcycle look more photorealistic. (6 marks)

**QUESTION 4**

- i) Image 2 shows an important process. It is usually done after a 3D model is finished and before a texturing process starts. What is the **NAME** of the process shown in Image 2 and **EXPLAIN** what it is. (4 marks)

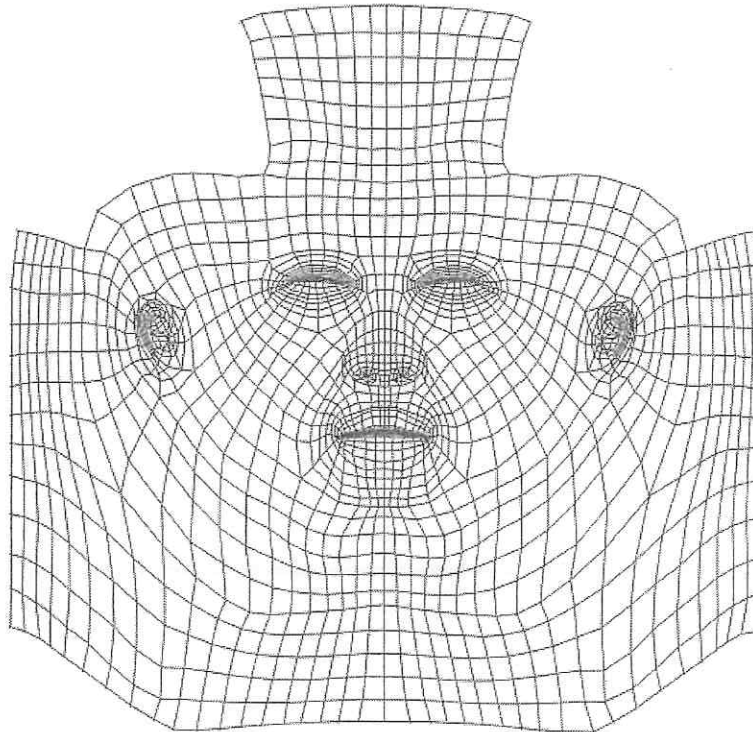


Image 2

Continued .....

- ii) What is the importance of the process shown in Image2? (2 marks)
- iii) Describe a situation when the process shown in the image above is not done right. (4 marks)

### **QUESTION 5**

Rendering using passes and layers will provide a more efficient workflow in managing one's post-production. Render passes are rendered images which record different attributes or channels of one's 3D scene.

**NAME and DESCRIBE FIVE (5) passes that can be generated in Autodesk Maya. (10 marks)**

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